UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,555	03/05/2007	Ole Koudal	BORS3002	5058

23364 7590 04/27/2011
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314-1176

EXAMINER	
BENLAGSIR, AMINE	

ART UNIT	PAPER NUMBER
2612	

MAIL DATE	DELIVERY MODE
04/27/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/578,555	**Applicant(s)** KOUDAL ET AL.	
	Examiner AMINE BENLAGSIR	**Art Unit** 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

- **Claims 18-34 are pending.**
- **Claims 1-17 are cancelled.**
- **Claim 18 is amended.**

Response to Arguments

Applicant's arguments filed 03/02/2011 have been fully considered but they are not persuasive.

In response to applicant's arguments regarding the new added limitations: "…transmitting digital signals between the two measurement transmitters via the additional communication connections that is arranged between the two communication connections…". Examiner notifies applicant that the new added limitations are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Response to Amendment

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "KOM3" and "KOM2" have both been used to designate same communication connection. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 18 requires "…transmitting digital signals between the two measurement transmitters <u>via the additional communication connections that is arranged between the two communication connections</u>…" However, the specification as originally filled and newly amended has no support and does not provide sufficient evidence and disclosure as how the additional communication connection is arranged and performed <u>from</u> the first and second communication. A person of ordinary skill in the art of generating pulses in a drilling fluid cannot make and use the invention because it fails to explain how an additional communication connection is retrieved or technically arranged from the first and second communication connection. Therefore, claims 19-34 are rejected as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 18-20, 22-23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1)** in view of **Heidepriem (US2006/0164771A1)**.

As per claim 18, Langels et al. discloses a method for transmitting measured values between two measurement transmitters, which transmit, via two communication connections, digital signals according to the master/slave principle and analog signals to a control system, which serves as master, whereas a first of the two measurements transmitters is connected via a first of the two communication connections with the control system, and a second of the two measurements transmitters is connected via a second of the two communication connections with the control system, comprising the steps of:

transmitting digital signals between the two measurement transmitters **(Langels et al. fig 2, col 3 ln 58-65)** via the additional communication connections **(Langels et al. fig 2:46)** that is arranged between the two communication connections **(Langels et al. fig 2:46, col 3 ln 58-65)**;

using the first measurement transmitter as a receiver measurement transmitter and **(Langels et al. fig 2:40)** the second measurement transmitter as a transmitting measurement transmitter **(Langels et al. fig 2:43)**; and

examining incoming digital signals at the receiving measurement transmitter **(Langels et al. fig 2:40, wherein technology module 40 is equivalent to module 8)** for at least one characteristic value **(Langels et al. col 3 ln 1-16: wherein characteristic values are interpreted as "setpoint" from technology module 9 or "sensor value" from technology module 11)** of the transmitting measurement transmitter **(Langels et al. fig 1:9,11)**, in order to find measured

values needed for evaluation **(Langels et al. col 3 ln 37-43)** in the receiver measurement transmitter **(Langels et al. fig 2:40, technology module 8 is equivalent to module 40)**.

Langels et al. does not disclose a method for transmitting measured values between two measurement transmitters providing an additional communication connection for the transmission of the digital signals between the two communication connections.

Heidepriem discloses a method for transmitting measured values between two measurement transmitters providing an additional communication connection for the transmission of the digital signals between the two communication connections **(Heidepriem par[0035]-[0036]: wherein the additional communication connection is interpreted as a direct communication between the two measurements transmitters without using the control system, *and the " HART protocol" is provided as a type of transmission "referring to par[0027]"*).**

Therefore, it would have been obvious to implement an additional communication connection for the transmission of the digital signals between the two communication connections of Heidepriem in the Langels et al. method for transmitting measured values between two measurement transmitters.

The motivation would to provide a device for transmitting, exchanging, and/or forwarding data and/or information in the context of industrial process and/or automation technology, and a device which permits a redundant data communication because a sensor or transmitter can exchange data and information with another sensor or transmitter via a plurality of paths (Heidepriem par[0001], [0006]).

As per claim 19, Langels et al. in view of Heidepriem discloses the method wherein:

communication between the measurement transmitters **(Langels et al. fig 1:9,11)** and the

control system **(Langels et al. fig 1:1)** occurs according to the HART®-standard **(Heidepriem par[0027], [0033]**).

As per claim 20, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter evaluates the units characterizing number associated with a given numerical value **(Langels et al. col 3 ln 1-16**); and

the meaning of the units characterizing number is established in the HART®-standard **(Heidepriem fig 2:3, par[0027], [0035]: wherein the circular elements at the end of the individual communication paths 3 characterize a first type of HART transmission**).

As per claim 22, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter is operated in master mode **(Langels et al. fig 1:1 & 8, col 3 ln 1-16: wherein the module 8 reads out the measured values of the transmitting measurement transmitters such as setpoint values from module 9 and sensor values from module 11)** and reads the measured values out of the transmitting measurement transmitter **(Langels et al. col 3 ln 1-16**).

As per claim 23, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter **(Langels et al. fig 1:8, technology module 8 is equivalent to module 40)** and the transmitting measurement transmitter **(Langels et al. fig 1:9,11)** register different measured variables **(Langels et al. col 3 ln 1-16**).

As per claim 33, Langels et al. in view of Heidepriem discloses the method wherein:

the receiver measurement transmitter accepts and evaluates signals from more than one transmitting measurement transmitter **(Langels et al. fig 2:40: wherein the receiver**

measurement transmitter herein "technology module" evaluates signals from transmitting **measuremen*t transmitters herein "technology modules" 41 & 43).***

2. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1),** in view of **Heidepriem (US2006/0164771A1)** and further in view of **Larson et al. (US6850973B1) herein after Larson**.

As per claim 21, Langels et al. in view of Heidepriem does not disclose the method wherein the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals.

Larson et al. discloses the method wherein:

the transmitting measurement transmitter is placed in the HART® burst mode, for transmitting its measured values in regular intervals **(Larson et al. fig 1, col 3 ln 11-36).**

Therefore, it would have been obvious to implement the Hart burst mode feature of Larson et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a communication protocol that is implemented in process control network with a different physical configuration, allows transmission of non-process control information without affecting the network's ability to perform process control (Larson col 3 ln 32-37).

3. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1),** in view of **Heidepriem (US2006/0164771A1)** and further in view of **Cook et al. (US2004/0049358A1)**.

As per claim 24, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter, a computer unit is installed with an evaluation program, which determines from the different measured variables a derived measurement variable.

Cook et al. discloses the method wherein:

the receiver measurement transmitter, a computer unit is installed with an evaluation program **(Cook et al. par[0070] ln 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)**, which determines from the different measured variables a derived measurement variable **(Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable)**.

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

As per claim 25, Langels et al. in view of Heidepriem does not disclose the method, wherein the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a pressure measuring device, which determine, respectively, flow velocity and pressure in a medium.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device **(Cook et al. fig 1:140, par[0056])** and the transmitting measurement transmitter is a pressure measuring device **(Cook et al. fig 1:160, par[0056])**, which determine, respectively, flow velocity and pressure in a medium **(Cook et al. fig 7, par[0033]-par[0034])**.

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

As per claim 26, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit **(Cook et al. par[0070] ln 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)**, which determines, from the pressure value and flow velocity of the medium, a derived, measured variable **(Cook et al. fig 7, par[0033]-par[0034]: wherein the calibrating constant "k" according to the disclosed equation is computed referring to par[0072], and is equivalent to the derived measured variable)**.

As per claim 27, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

the vortex measuring device contains an additional, installed, temperature sensor **(Cook et al. fig 6:640, par[0091])**.

As per claim 28, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

installed in the vortex measuring device is a flow computing unit **(Cook et al. par[0070] ln 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)**, which determines from the flow velocity of the medium, the temperature value and the pressure, a derived, measured variable (e.g. heat flux value or mass flow value) **(Cook et al. fig 7, par[0028], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables)**. **Obviousness is as established in claim 25.**

As per claim 29, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device with an installed, additional, temperature sensor, and the transmitting measurement transmitter is a temperature measuring device.

Cook et al. discloses the method wherein:

the receiver measurement transmitter is a vortex measuring device **(Cook et al. fig 1:140, par[0056])** with an installed, additional, temperature sensor **(Cook et al. par[0056]: wherein the temperature sensor not shown in fig 1)**, and the transmitting measurement transmitter is a temperature measuring device **(Cook et al. fig 6:640, par[0091])**.

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

As per claim 30, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

in the measuring device, a flow computing unit is installed **(Cook et al. par[0070] ln 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)**, which determines from the flow velocity of the medium, the temperature value of the temperature sensor of the vortex measuring device and the temperature value of the temperature measuring device, a derived, measured variable (e.g. energy drain) **(Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables)**.

As per claim 31, Langels et al. in view of Heidepriem does not disclose the method wherein the receiver measurement transmitter is a vortex measuring device and the transmitting measurement transmitter is a temperature measuring device, which determine, respectively, flow velocity and temperature in a medium.

Cook et al. discloses the method wherein the receiver measurement transmitter is a vortex measuring device **(Cook et al. fig 1:140, par[0056])** and the transmitting measurement transmitter is a temperature measuring device **(Cook et al. fig 6:640, par[0091])**, which determine, respectively, flow velocity and temperature in a medium **(Cook et al. fig 7, par[0028]-par[0030])**.

Therefore, it would have been obvious to implement the method of deriving measurement variables of Cook et al. in the Langels et al. in view of Heidepriem method for transmitting measured values between two measurement transmitters.

The motivation would to provide a reliable and faster method for determining and obtaining derived measurement data in a variety of applications.

As per claim 32, Langels et al. in view of Heidepriem and Cook et al. discloses the method wherein:

in the vortex measuring device, a flow computing unit is installed **(Cook et al. par[0070] ln 17-21, par[0034]: wherein the controller being operable to execute the instructions is equivalent to a computer unit)**, which determines from the flow velocity of the medium and the temperature, a derived, measured variable (e.g. heat flux value or mass flow value, for liquids or saturated steam) **(Cook et al. fig 7, par[0033]-par[0034], par[0102]-[0108]: wherein equations 6-10 are representing the derived measured variables)**.

4. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Langels et al. (US6473656B1),** in view of **Heidepriem (US2006/0164771A1),** in view of **Cook et al. (US2004/0049358A1) and further in view of Van Der Pol (EP0691528A2)**.

As per claim 34, Langels et al. in view of Heidepriem and Cook et al. does not disclose the method wherein the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device.

Van Der Pol discloses the method wherein:

the receiver measurement transmitter is a Coriolis flow measuring device, an ultrasonic flow measuring device or a magneto-inductively or thermally working, flow measuring device **(Van Der Pol fig 1, page 2 ln 13-20: wherein the measurement transmitter is a Coriolis flow measuring device)**.

Therefore, it would have been obvious to implement the type of receiver measurement transmitter of Van Der Pol in the Langels et al. in view of Heidepriem and Cook et al. method for transmitting measured values between two measurement transmitters.

The motivation would to provide a method for measuring and/or monitoring flow parameters of a medium, which medium flows through a mass flow measuring instrument.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMINE BENLAGSIR whose telephone number is (571)270-5165. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN ZIMMERMAN can be reached on (571)272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./

Examiner, Art Unit 2612

/Albert K Wong/

Primary Examiner, Art Unit 2612